the copolymer such that no more that 10% of the free carboxylic acid groups of the copolymer are converted to salts; and

wherein the mixture's pH is less that the polymer's solubilization; and

(b) drying the mixture to produce a pesticidal matrix.

Remarks

Claims 36, 39-61, 63-78, 81-93 and 95-100 are pending. Claims 40-43, 72, 82 and 99 have been rejected. Claim 40 has been canceled. Claims 41, 72, 82 and 99 have been amended. No new matter has been added by these amendments. Reconsideration is respectfully requested in light of these amendments and the following remarks.

I. Restriction Requirement

Claims 36, 39-61, 63-78, 81-93 and 95-100 are pending in the instant application. The pending claims have been subjected to Restriction by the Examiner as follows:

Group I, claims 36, 39-61, 63-68, 71-73, 81-93 and 95-100, drawn to a methods of producing pesticidal matrices; and

Group II, claims 69-70, and 74-78, also drawn to production of a pesticidal matrix.

The Examiner suggests that Groups I and II as set forth above are distinct, each from the other. Applicants respectfully traverse this restriction requirement.

MPEP §803 is quite clear; for a proper restriction requirement, it must be shown (1) that the inventions are

independent or distinct AND (2) that there would be a serious burden on the Examiner if the restriction is not required. MPEP 802.01 defines "distinct" to mean that the "two or more subjects as disclosed are related, for example, as combination and part (subcombination) thereof, process and apparatus for its practice, process and product made there, etc., but are capable of separate manufacture, use, or sale, as claimed, AND ARE PATENTABLE (novel and unobvious) OVER EACH OTHER."

All of claims of the instant application relate to the single concept of producing coated pesticidal matrices. Accordingly, each of the claims contain the components for use in the same endpoint. Thus, Applicants respectfully disagree that the two Groups set forth by the Examiner are distinct as being novel and unobvious over each other, as required by MPEP § 802.01. Additionally, the claims of Group II are dependent claims which depend from the claims of Group I. Accordingly, restriction is not proper.

Further, a search of literature relating to coated pesticidal matrices would clearly reveal art relating to both of these Groups. Thus, the inclusion of both Groups in this application would not be overly burdensome to the Examiner. Accordingly, the instant Restriction Requirement meets neither of the criteria as set forth by MPEP §803 to be proper. Reconsideration and withdrawal of this Restriction Requirement is therefore respectfully requested.

However, in an earnest effort to be completely responsive, Applicants elect Group I, claims 36, 39-61, 63-68, 71-73, 81-93 and 95-100 with traverse.

II. Rejection of Claims Under 35 U.S.C. 112, second paragraph

Claims 40-43, 72, 82 and 99 have been rejected under 35 U.S.C. 112, second paragraph. Claim 40 has been canceled. Claims 41, 72, 82 and 99 have been amended. Claim 41 has been amended to depend on claim 36, instead of claim 40. Claim 72 has been amended to clarify that the virus is selected from various Nuclear polyhedrosis viruses and from various Granulosis viruses. Support for the amendment of claims 82 and 99 to correct a problem with antecedent basis can be found throughout the specification and especially at page 10, lines 8 through 34. Withdrawal of these rejections is therefor respectfully requested.

III. Rejection of Claims Under 35 U.S.C. 103(a)

The rejection of claims 36, 39-61,63-78, 81-93, 95-100 under 35 U.S.C. 103(a) as being unpatentable over Miller (5,662,897), Bohm et al. (4,948,586), Fakhruddin (EP 697170), and Rheaume et al (5,560,909) has been maintained. The Examiner suggests that not requiring specified pH or amounts, but mandating pH below the solubilization point is not a patentable distinction. The Examiner also suggests that using ingredients used for their known purpose and optimizing the effects of those ingredients is not a basis for patentability. Applicants respectfully traverse this rejection.

Rheaume (5,560,909) discloses and claims methods for creating polymer coated, ingestible insecticides. These insecticides can be created with materials that aid in flotation to target specific aquatic feeding areas of insect larvae.

Previous insecticides tended to sink below their target layer. There are four methods to prepare these pesticides, all of which involve changing the charge of the polymer to entrap the insecticide matrix. Only one uses a change in pH to cause the polymer to precipitate out of the solution and when compared to the other methods of production, changing the pH to cause precipitation was actually found not to be as effective at producing the coated pesticides (See, Column 10, Table 1).

Rheaume further teaches the use of copolymers and multipolymers to coat the insecticide. The preferred copolymers are ethylene and acrylic acid or a copolymer of ethylene and methacrylic acid. They also teach that the following multipolymers may be used:
ethyl acrylate/vinyl acetate/methacryilic acid/acrylic acid, and methyl acrylate/methacrylic acid/ethyl acrylate. Ratios or proportions for mixing the multipolymers are not taught (See, Column 15, lines 32-53).

Bohm et al. (4,948,586) teach different methods to create a coated pesticide which includes a sunscreening agent. A four part methodology is taught involving the combination of two solutions. One of the solutions is acidic and contains the polymer and other ingredients. The other is a solution of the pesticide. These are combined, and a base is added, to form microcapsules. Heating and stirring may also be required, but are not included in the basic four step method (See, Column 6 lines 43-45). The invention further requires that the viruses used remain active in an acidic environment. The polymers used are taught to be soluble above a pH of 7, so they can be dissolved in the alkaline (basic) environment of the insect's gut. The polymers are chosen from a

list containing: methacrylic acid, a methacrylic acid methyl ester mixed in a ratio where the free carboxyl groups to ester groups is 1:1 or about 1:2, or a copolymer synthesized from acrylic and methacrylic acid esters when the ratio of ammonium groups is between 1:10 to 1:40, when compared to neutral methacrylic or acrylic acid esters (for example see, Column 11, lines 14-23)

Miller et al. (5,662,897) focus on genetically engineering recombinant viruses that have a faster killing speed than previous pesticide inventions. An alkaline pH is used to cause a polymer (Eudragit S100) to dissolve in solution. This occurs at a pH range between 9 and 9.5.

Fakhruddin (EP 697170) discloses a method using an organic solution containing a pH dependent polymer, and optionally a plasticizer. The pH is adjusted to become more basic (pH range 8.5-10). This is taught to be above the solubilization pH of the pH dependent polymer. Fakhruddin teaches that the copolymers may be chosen from a group consisting of a methacrylic acid and methyl methacrylate, a mixture of methacrylic acid and methyl methacrylate copolymers and a maleic anhydride and styrene copolymer (See, Page 19, lines 19-21 and 39-41).

To establish a *prima facie* case of obviousness, three basic criteria must be met. MPEP 2143. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of the ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art must teach or suggest all claim limitations.

In contrast, the present invention provides a method for preparing a coated pesticide from a pH dependent polymer without converting a large number of the free carboxylic acid groups into their salt form. This helps the pesticide retain a much higher percentage of insecticidal activity after exposure to UV radiation and provides a greater residual activity compared to the coated pesticides described in Fakhruddin (for example, see page 4, lines 1-8 of the instant specification). None of the other cited references have had the same success in retaining the free carboxylic acid groups.

The polymers used in the present invention and the proportions for combining them are unique. Polymers in this invention are selected from a group consisting of an ethyl acrylate/methacrylic acid copolymer having free carboxylic acid groups and ester groups in a ratio from about 1:1 to about 1:2, a methacrylic acid/methyl acrylate/methyl methacrylate multipolymer having monomers in a ratio of from about 1:5:2 to about 3:7:3 and mixtures thereof (See, Specification Page 7-8, lines 31-19). The combination of these polymers and the ratios that they are to be mixed in, are not taught or suggested in the cited art. Clearly different results, using similar methods, suggest that the current invention is unexpected.

IV. Conclusion

Applicants believe that the foregoing comprises a full and complete response to the Office Action of record. Accordingly, favorable reconsideration and subsequent allowance of the pending claims id earnestly solicited.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE**."

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

Claim 40 has been canceled.

Claims 41, 72, 82 and 99 have been amended as follows:

41. (twice amended) A process as described in claim ~~40~~ 36, wherein the base is a hydroxide compound.

72. (twice amended) A process as described in claim 71, wherein the double stranded enveloped DNA virus *Eubaculovirinae* is selected from the group consisting of:

~~(1)~~ a nuclear polyhedrosis virus (NPV) of *Lymantria dispar* NPV, *Anagrapha falcifera* NPV, *Spodoptera littoralis* NPV, *Mamestra brassicae* NPV, *Choristoneura fumiferana* NPV, *Trichoplusia ni* NPV, *Heliocoverpa zea* NPV, *Rachiplusia ou* NPV, an *Autographa californica* NPV selected from the group consisting of V8vEGTDEL, V8vEGTDEL-AaIT, AcMNPV E2, AcMNPV L1, AcMNPV V8, AcMNPV Px1, and mixtures thereof; and

~~(2)~~ a granulosis virus (GV) of the *Cydia pomonella* GV, *Pieris brassicae* GV, *Trichoplusia ni* GV, *Artogeia rapae* GV, *Plodia interpunctella* GV, and mixtures thereof.

82. (twice amended) A process as described in claim 36, wherein

(a) the polymer is selected from the group consisting of an ethyl acrylate/methacrylic acid copolymer having free carboxylic acid groups and ester groups in a ratio of about 1:1, a methyl methacrylate/methacrylic acid copolymer having free carboxylic

acid groups and ester groups in a ratio of from about 1:1 to about 1:2, a methacrylic acid/methyl acrylate/methyl methacrylate copolymer having monomers in a ratio of from about 1:5:2 to about 3:7:3, and mixtures thereof;

(b) the plasticizer is selected from the group consisting of triethyl citrate and a poly(ethylene glycol) having an average molecular weight of about 1,000 to 10,000; and

(c) the ~~stilbene compound~~ activity enhancer is selected from the group consisting of Blancophor BBH, Calcofluor White M2R, Phorwite AR, and mixtures thereof.

99.(amended) A process comprising

(a) preparing an aqueous mixture containing a pesticidal agent, a pH-dependent polymer, a base, optionally a plasticizer, optionally an ultraviolet protector, optionally an activity enhancer, optionally a gladdened, and water;

wherein

(A) the polymer is selected from the group consisting of an ethyl acrylate/methacrylic acid copolymer having free carboxylic acid groups and ester groups in a ratio from about 1:1 to about 1:2, a methacrylic acid/methyl acrylate/methyl methacrylate copolymer having monomers in a ratio of from about 1:5:2 to about 3:7:3 and mixtures thereof;

(B) the plasticizer is selected from the group consisting of triethyl citrate and a poly(ethylene glycol) having an average molecular weight of about 1,000 to 10,000;

(C) the ~~stilbene compound~~ activity enhancer is selected from the group consisting of Blancophor BBH, Calcofluor White M2R, Phorwite AR and mixtures thereof;

(D) the pesticidal agent is a biological insecticide selected from the group consisting of

(1) *Melolontha melolontha* EPV, *Amsacta moorei* EPB, *Locusta migratoria* EPV, *Melanoplus sanguinipes* EPV, *Schistocerca gregaria* EPV, *Aedes aegypti* EPV, *Chironomus luridus* EPV, and mixtures thereof;

(2) Lymantria dispar NPV, Anagrapha falcifera NPV, Spodotera littoralis NPV, Mamestra brassicae NPV, Choristoneura NPV, Trichoplusia ni NPV, Heliocoverpa zea NPV, Rachiplusia ou NPV, an *Autographa californica* NPV selected from the group consisting of V8vEGTDEL, V8vEGTDEL-AaIT, AcMNPV E2, AcMNPV L1, AcMNPV V8, AcMNPV Px1, and mixtures thereof;

(3) *Cydia pomonella* GV, *Pieris brassicae* GV, *Trichoplusia ni* GV, *Artogeia rapae* GV, *Plodia interpunctella* GV, and mixtures thereof.

(4) *Togaviridae*, *Bunyaviridae*, *Flaviviridae*, and mixtures thereof;

(5) *Reoviridae*, *Birnaviridae*, and mixtures thereof;

(6) *Picornaviridae*, *Tetraviridae*, *Nodaviridae*, and mixtures thereof;

(7) *Bacillus thuringiensis*, *Bacillus lentimorbus*, *Bacillus cereus*, *Bacillus popilliae*, *Photorhabdus luminescens*, *Xeorhabdus nematophilus*, and mixtures thereof; and

(8) *Beauveria bassiana*, *Entomophthora spp.*, *Metarrhizium anisopliae*, and mixtures thereof;

wherein the amount of base added is well below the amount required to fully solubilize

the copolymer such that no more that 10% of the free carboxylic acid groups of the copolymer are converted to salts; and

wherein the mixture's pH is less that the polymer's solubilization; and

(b) drying the mixture to produce a pesticidal matrix.